

Anti-Npas4 Recombinant Rabbit Monoclonal Antibody

Lot: NP41-2

Background

Neuronal PAS domain protein 4 (Npas4), also known as Le-PAS, NXF, PASD10, bHLHe79 is a member of the basic helix-loop-helix-PER-ARNT-SIM (bHLH-PAS) class of transcriptional regulators. Npas4 is encoded by the neuron-specific immediate-early gene (IEG) *npas4*, which is strongly induced by neuronal activity. Unlike traditional IEGs such as *cfos*, *npas4* does not respond to cAMP or stimulation by paracrine factors such as neurotrophins (Lin et al., 2008). Further, Npas4 expression is more rapid and transient than other IEGs (Ramamoorthi et al., 2011). This tight tuning to neuronal activity makes Npas4 an ideal marker of neuronal activity in the brain.

Lin, Y., Bloodgood, B.L., Hauser, J.L., Lapan, A.D., Koon, A.C., Kim, T.-K., Hu, L.S., Malik, A.N., and Greenberg, M.E. (2008). Activity-dependent regulation of inhibitory synapse development by Npas4. *Nature* 455, 1198–1204.

Ramamoorthi, K., Fropf, R., Belfort, G.M., Fitzmaurice, H.L., McKinney, R.M., Neve, R.L., Otto, T., and Lin, Y. (2011). Npas4 Regulates a Transcriptional Program in CA3 Required for Contextual Memory Formation. *Science* 334, 1669–1675.

Sensitivity/Specificity

This anti-Npas4 antibody has minimal non-specific background binding as assessed by immunocytochemistry on primary neurons, immunohistochemistry on brain slices and by Western blots. Further, immunoreactivity is completely lost in *npas4* KO mice. Immunoreactivity in mouse and rat has been demonstrated. Not tested in other species.

Antibody Solution and Concentration

Each vial contains 100 µl of a recombinant rabbit monoclonal anti-Npas4 antibody solution diluted to 1 mg/ml in filter sterile PBS.

Applications and Dilution

We would recommend a 1:500 – 1:2000 dilution as a starting point for staining cultured neurons, immunohistochemistry or Westerns. But of course, optimal dilution factors will vary depending upon the specifics of your procedure.

Storage

The antibody is shipped on ice packs. Please keep at +4°C temporarily and upon first opportunity aliquot and freeze at -20°C for long-term storage. After thawing aliquots for use, each aliquot should be kept at +4°C for up to 1 month.

Questions

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